A large graphic on the left side of the slide shows a globe with a grid of latitude and longitude lines. A white airplane is shown flying across the sky, leaving a white contrail that extends across the globe.

Safe Flight 21

East Coast Implementation of Broadcast Services

ICNS Conference
April 2004
Rob Strain

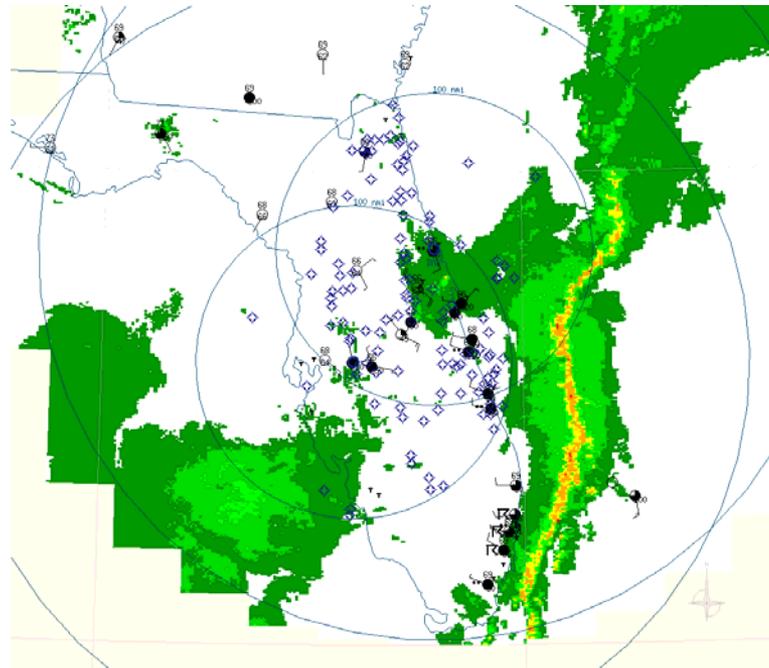


Services Provided

- **Automatic Dependent Surveillance – Broadcast (ADS-B)**
 - A surveillance service that broadcasts traffic information derived from each suitably-equipped aircraft to enable air-air applications
 - Augments ground-based surveillance
- **Traffic Information Services – Broadcast (TIS-B)**
 - Surveillance services that broadcast real-time traffic information derived from ground surveillance sources with the intention of supporting air-air applications
 - Facilitates transition to ADS-B equipage
- **Flight Information Service – Broadcast (FIS-B)**
 - Service that broadcasts real-time, non-control aeronautical information such as textual and graphical weather, NOTAMs and PIREPS to enhance aircraft safety and utility
- **Flight Monitoring Service**
 - Service that provides registered aircraft and airport operators with real-time traffic and weather information

Mission Statement

To provide extensible real-time aviation broadcast services meeting industry requirements for weather, airspace and traffic information that is desirable to the users.



Purpose

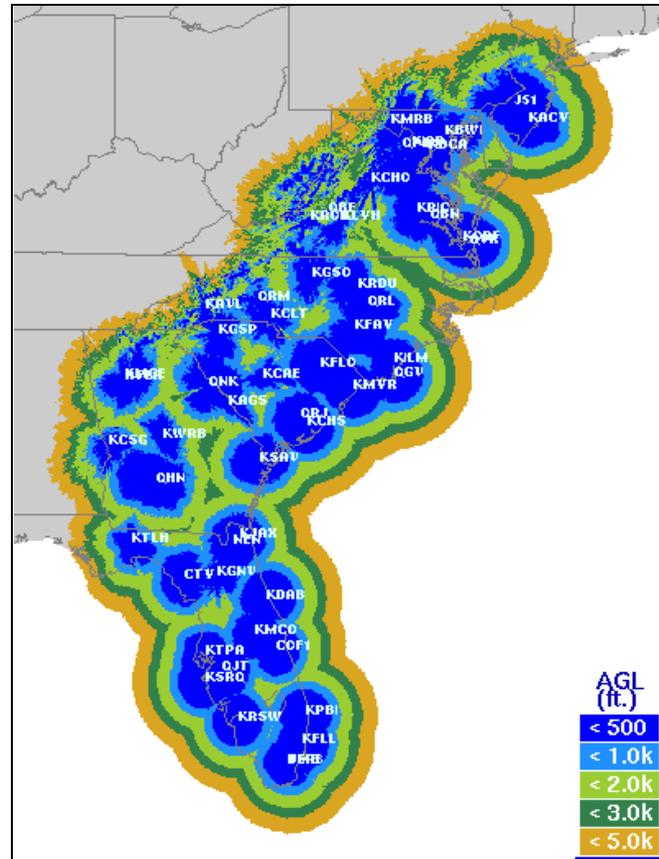
- **Promote FAA's Flight Plan 2004-2008 to reduce GA fatal accidents and provide international leadership**
- **Stimulate production and equipage of broadcast services avionics for NAS-wide benefits**
- **Support FAA ADS-B Link Decision**
- **Target where demand is strongest**
- **Begin installation in 2003, with a significant portion of the system in place by the end of 2004**

Why Implement on the East Coast? (NJ to FL and Prescott, AZ)

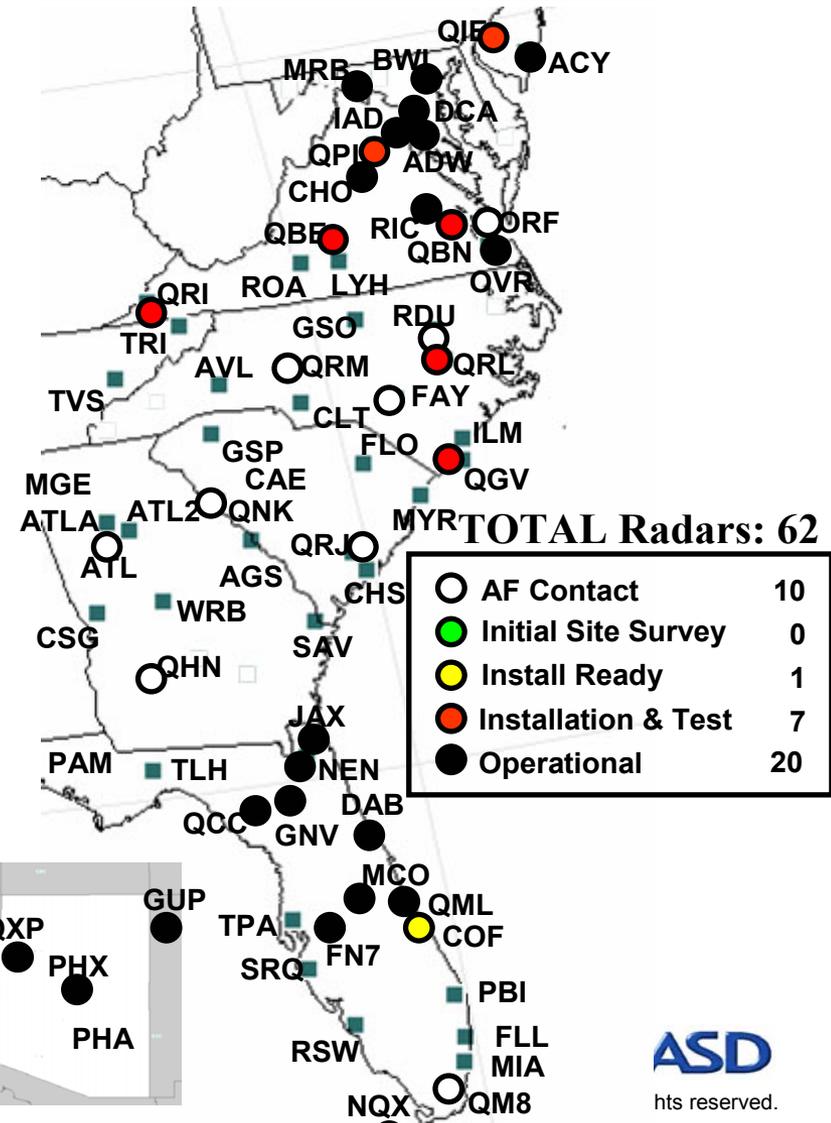
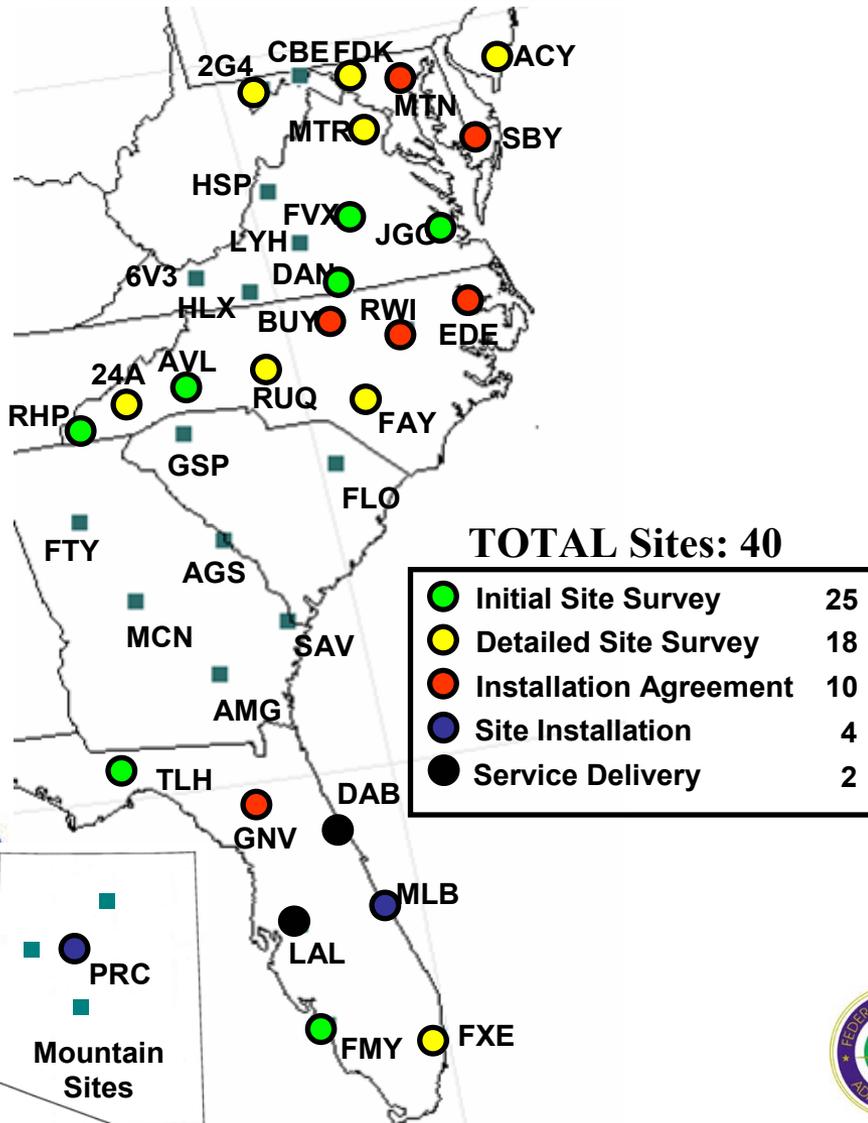
- **Interested “participants”**
 - Embry Riddle, state aviation authorities
- **Significant concentration of general aviation aircraft and flight training facilities**
 - 535 flight schools (estimated)
 - 51,428 registered aircraft
- **High number of rural communities with limited access to scheduled service**
 - Opportunities for extended surveillance
- **Airspace restrictions due to Special Use Airspace constraints**
- **Leveraging existing programs and infrastructure**
 - Safe Flight 21, NASA SATS
- **Wide variety of weather conditions**

Radar Coverage (TIS-B source)

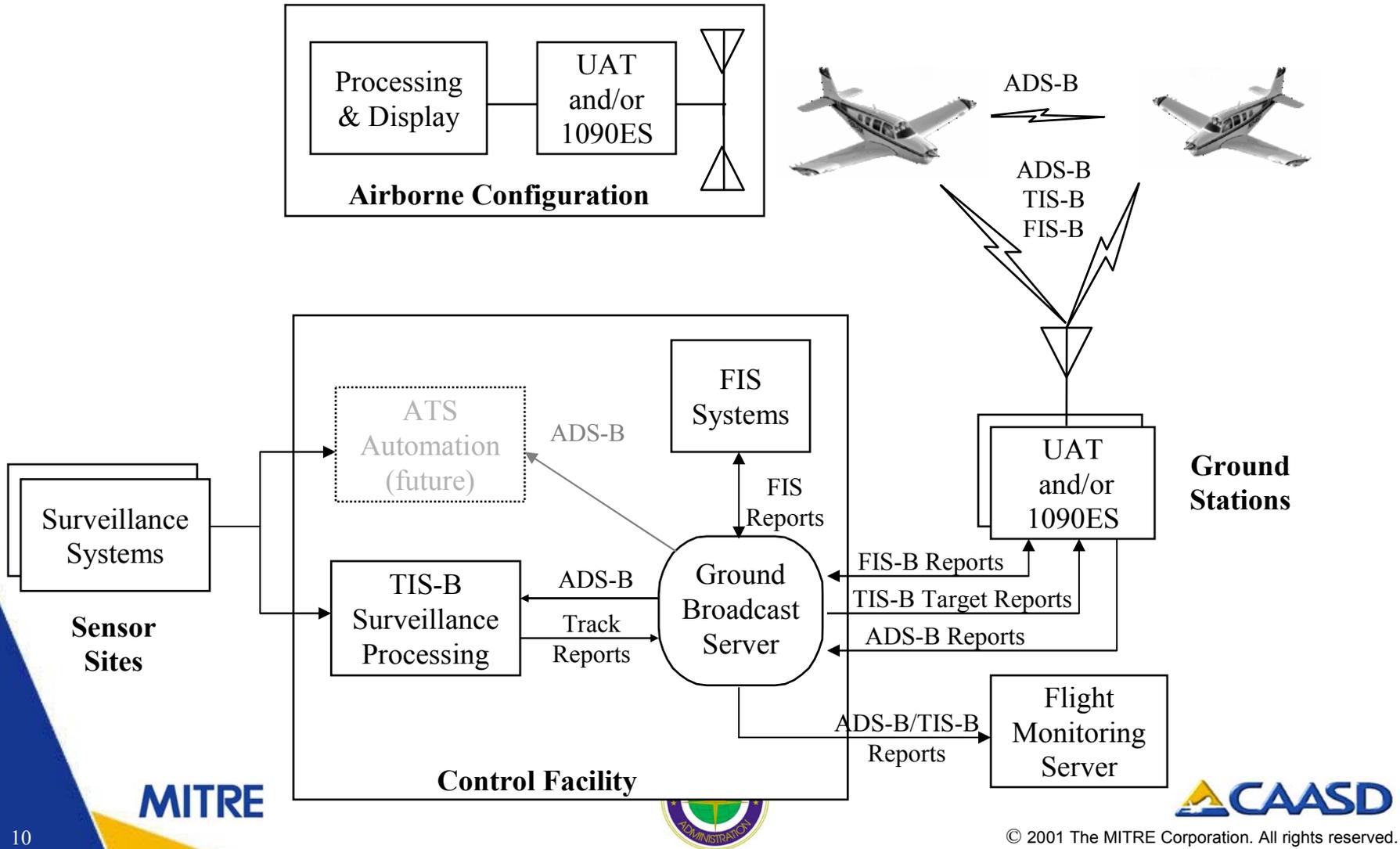
- 62 Radars (en route and terminal)



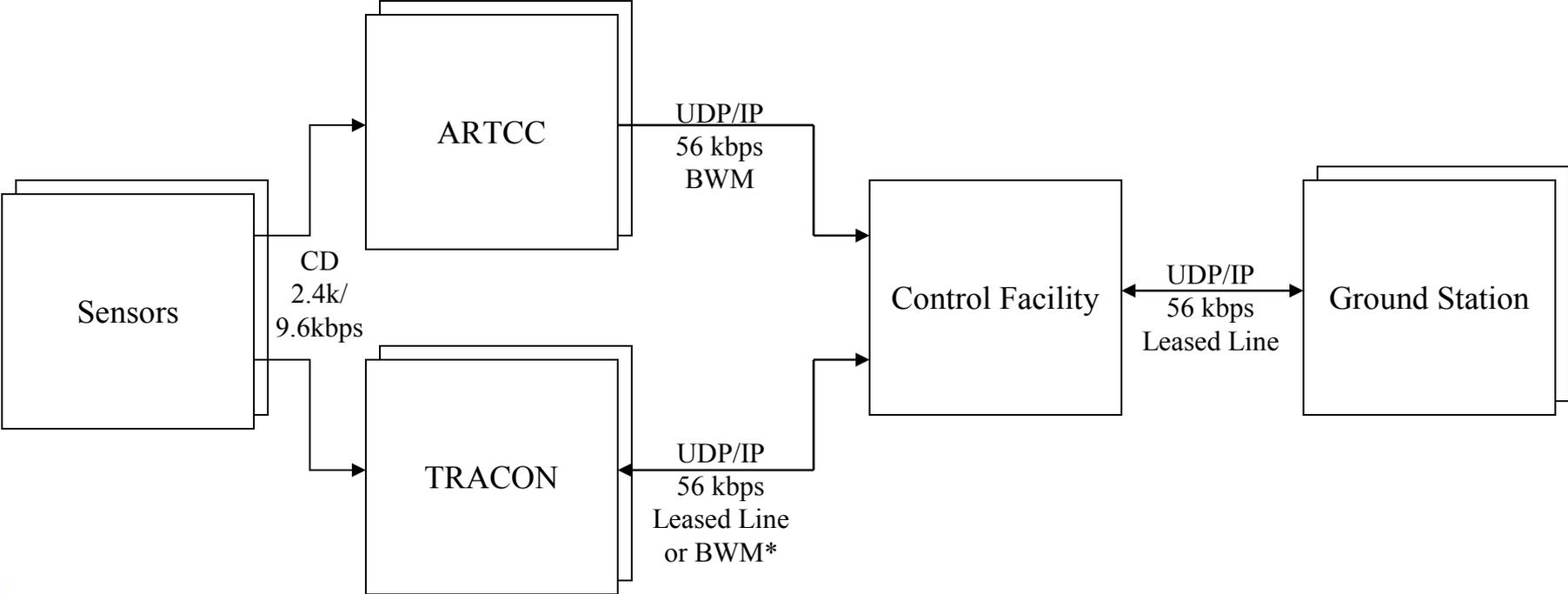
Installation Status (as of 4/21/04)



Functional Architecture

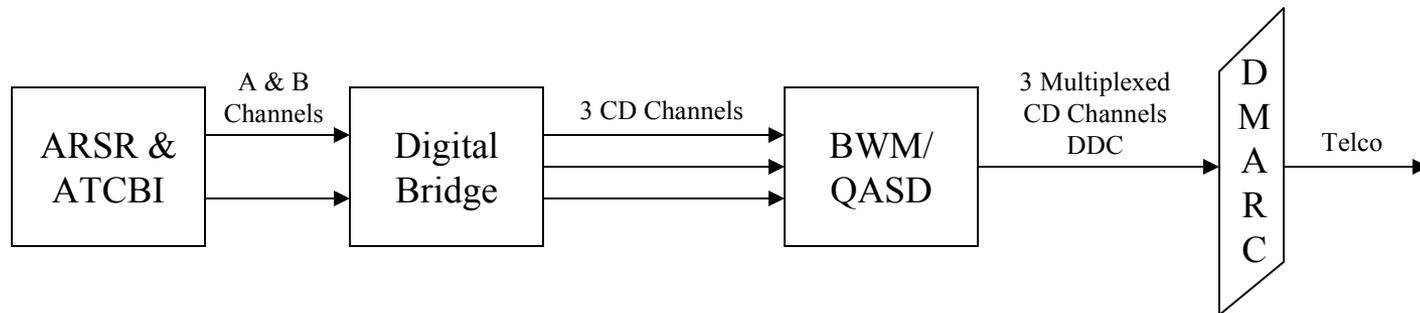


High Level Physical Architecture

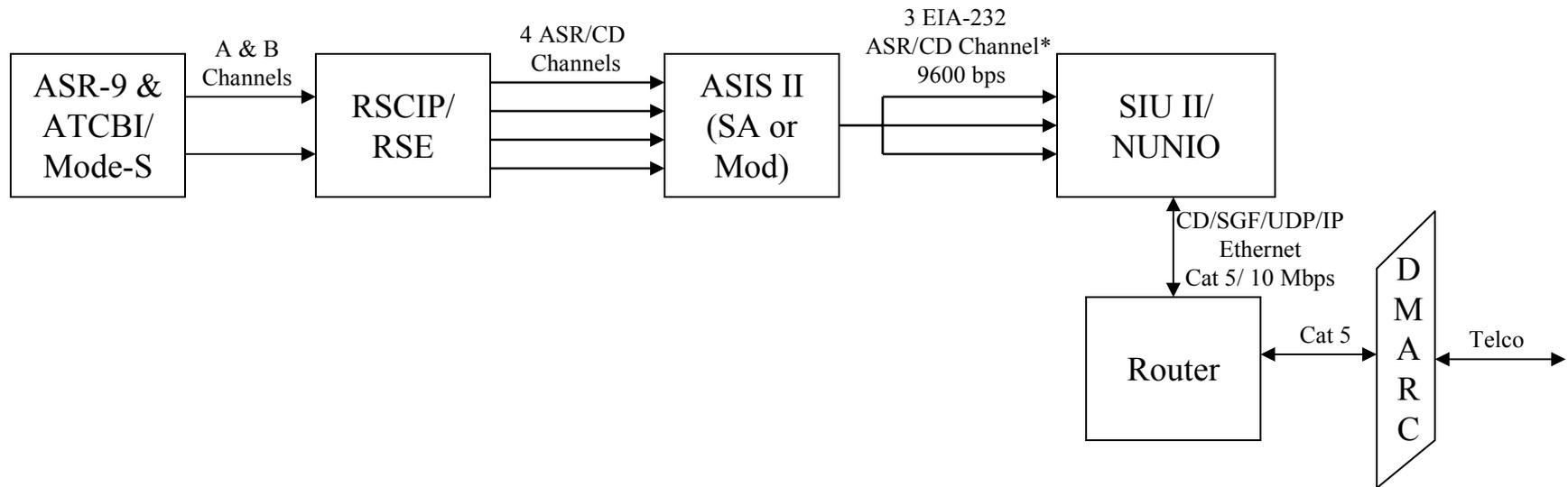


* Several terminal radar data will be transferred to the Control Facility via Bandwidth Manager (BWM). At other TRACONS, a router and a dedicated digital circuit will be used.

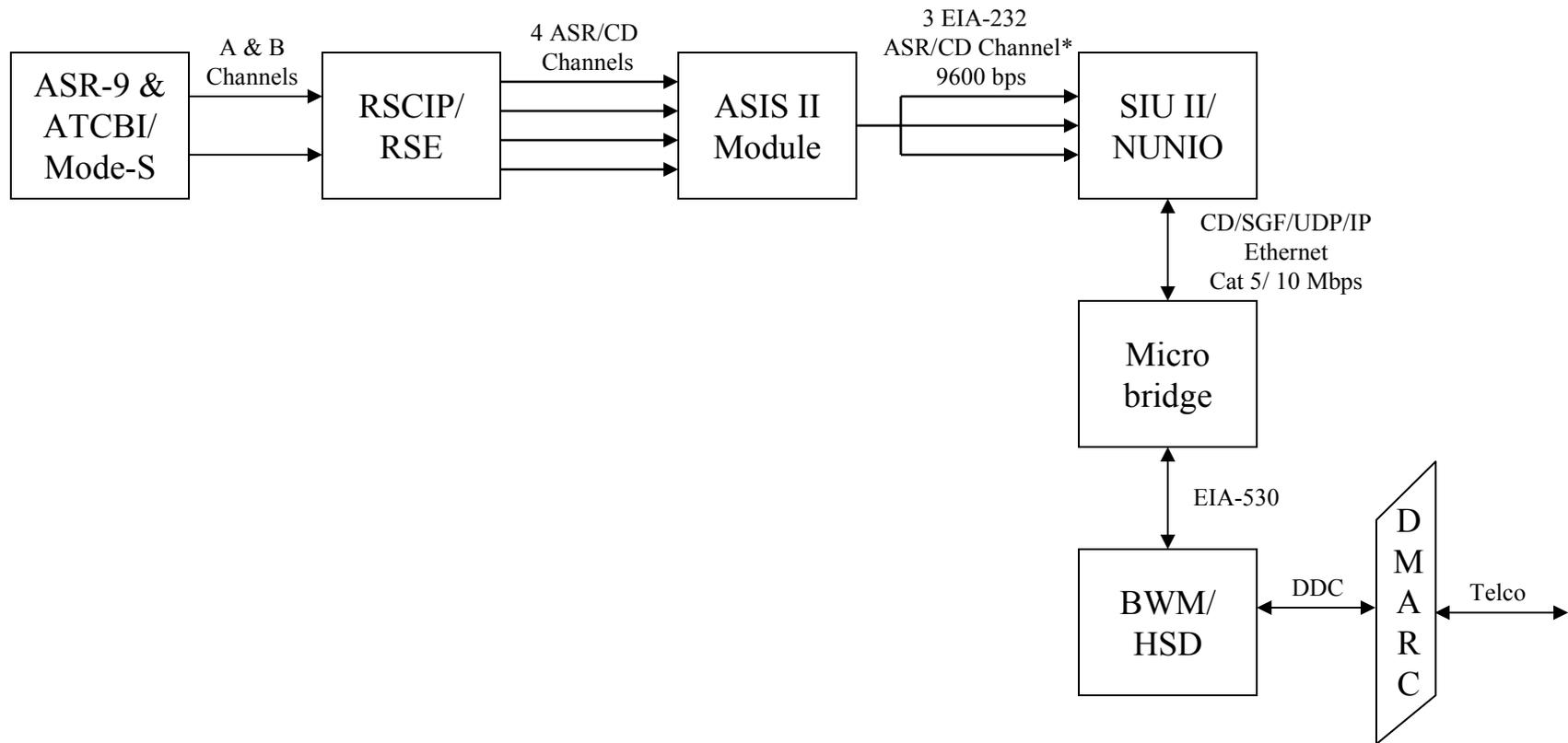
ARTCC Physical Architecture



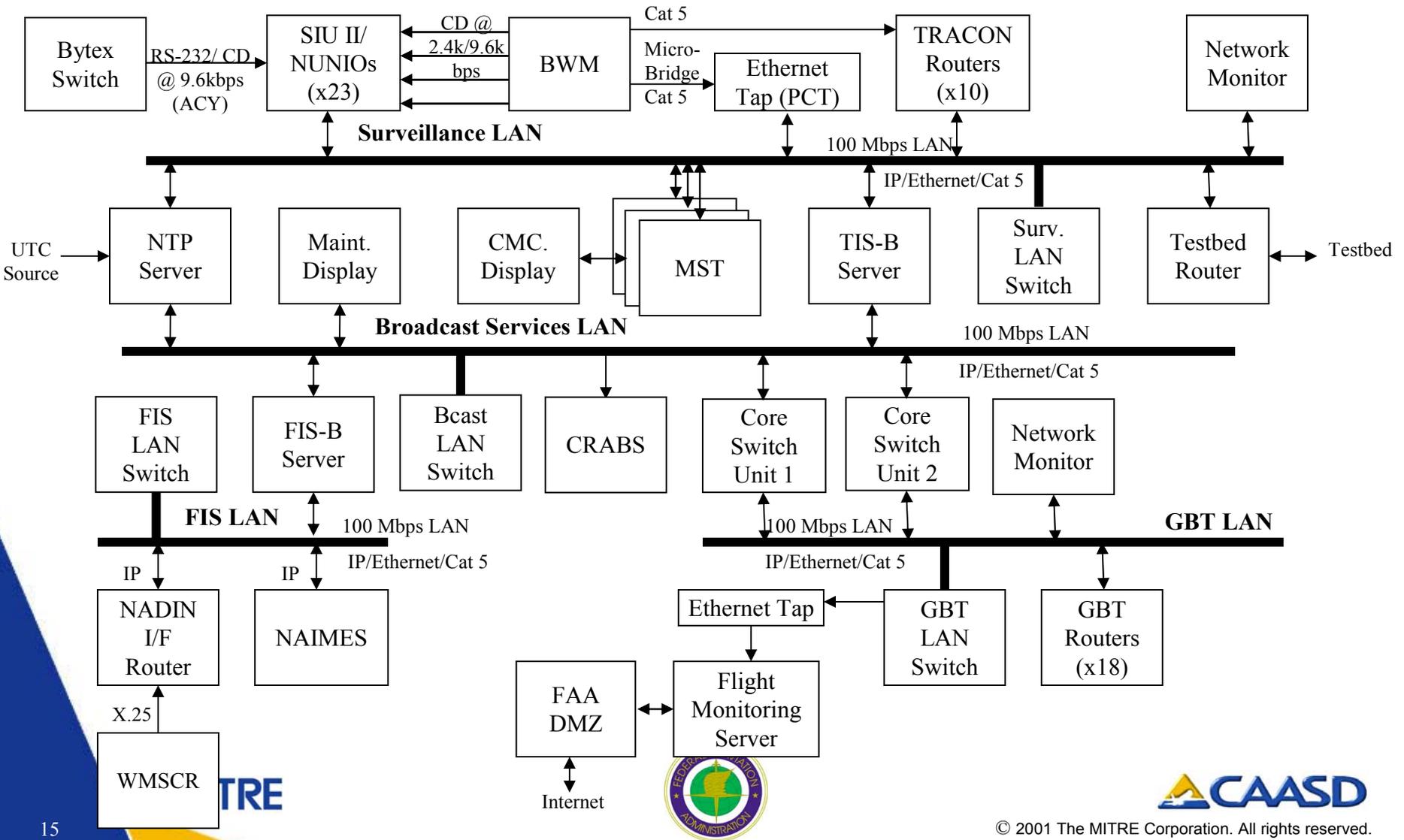
TRACON Physical Architecture (ASR-9)



TRACON Physical Architecture (ASR-9/BWM)

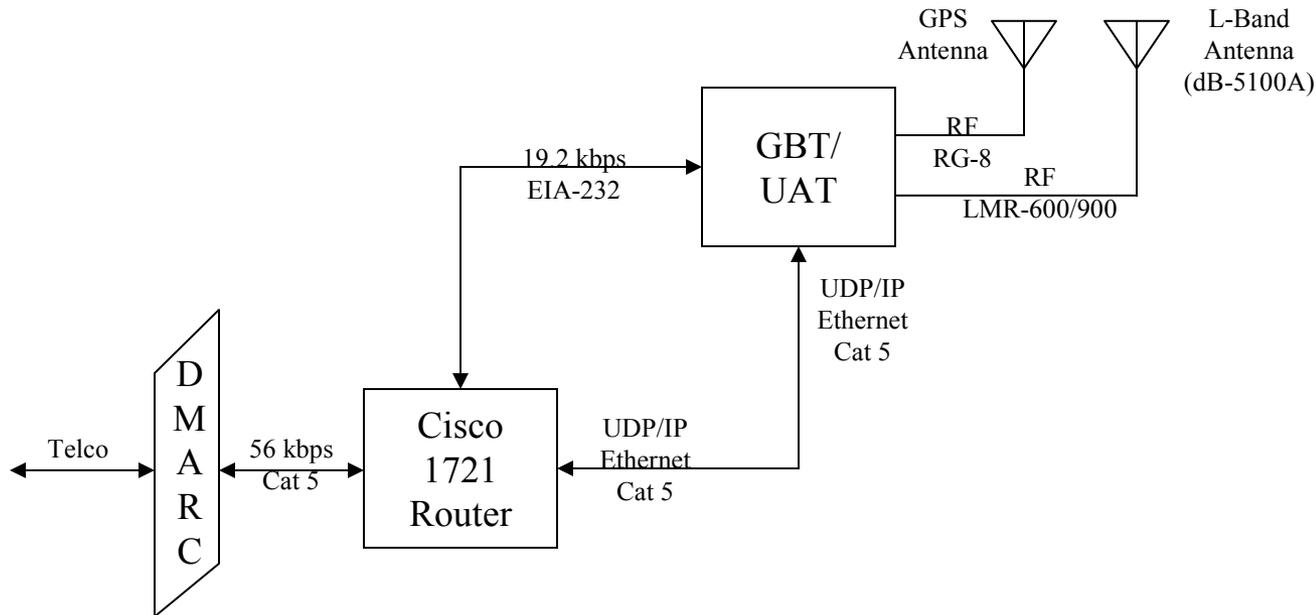


Control Facility Physical Architecture



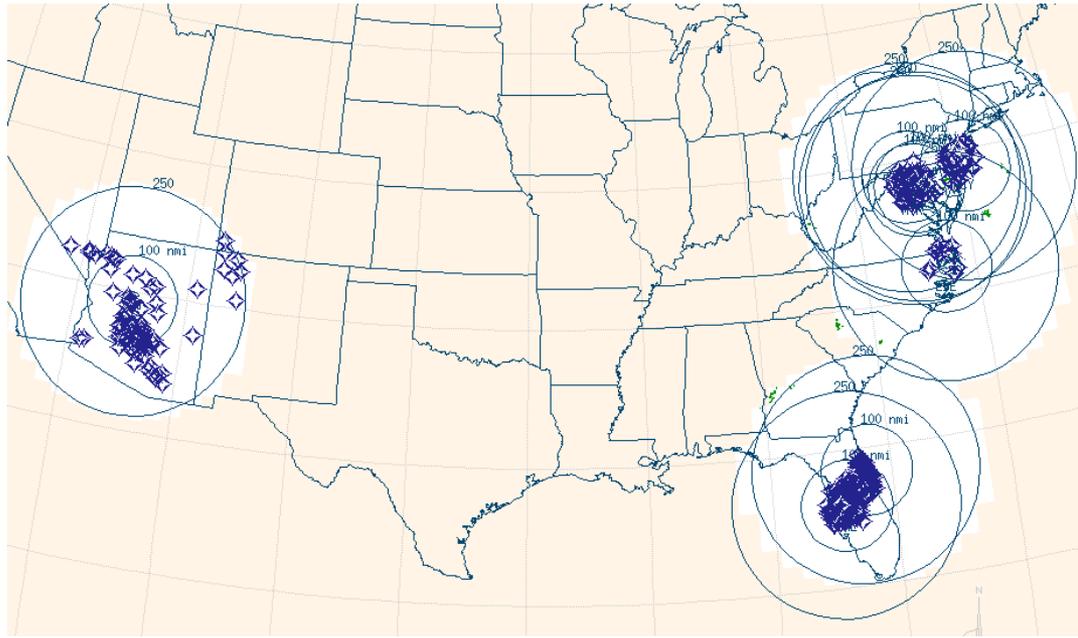
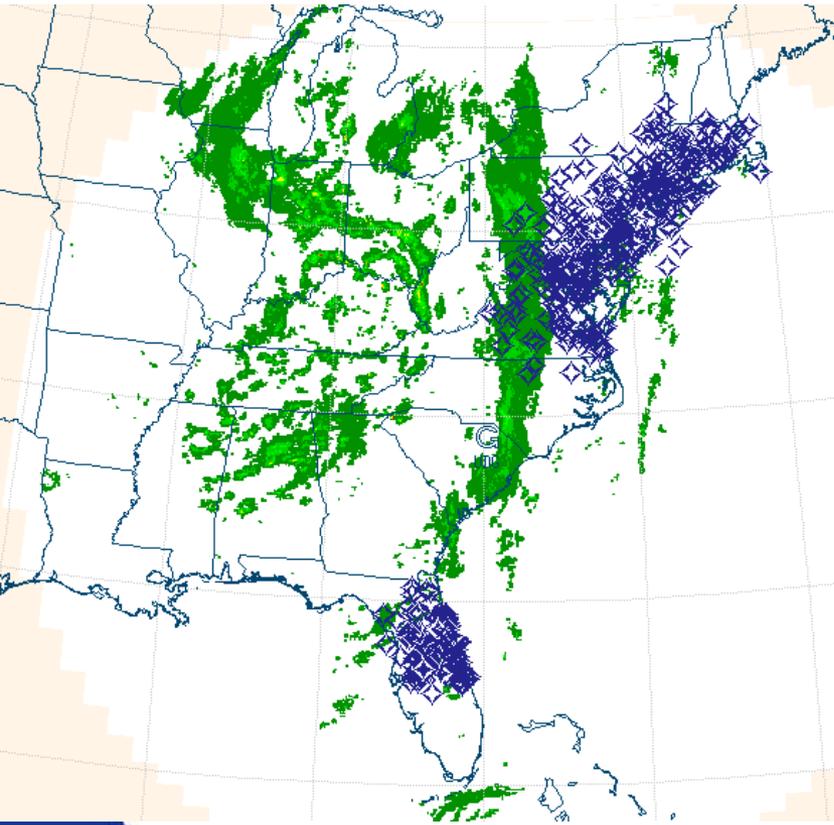
East Coast Broadcast Services

Ground Station Physical Architecture



Uplink Services: Making it Real

30 March 2004



19 April 2004

The Miracle Occurred

9 April 2004

**First 987 MHz UAT
Seen by SF21 System**

ERAU Test A/C →

3125 ft
108 knots

Sensis GBT →
At KDAB

DAB
-819200 ft
0 knots

